

C5B



Cost and Efficiency

**C5B Technical Annex 19
Management and General Investment Case:
Technical Approach and Business Case**

NTPBP-INV-MAN-0548

**BRISTOL
WATER**

Contents

1	FOREWORD	1
2	EXECUTIVE SUMMARY	2
3	BACKGROUND TO OUR INVESTMENT CASE	4
3.1	CONTEXT.....	4
3.1.1	<i>Head office, depots and other non-operational buildings</i>	4
3.1.2	<i>Vehicle Fleet</i>	4
3.1.3	<i>Health and Safety</i>	5
3.1.4	<i>Security</i>	6
3.1.5	<i>Water Resource Planning & Environmental Management</i>	6
3.1.6	<i>Business Improvement Work Steams</i>	7
3.1.7	<i>Project Work – Next Price Review (PR24)</i>	7
3.1.8	<i>Production Buildings</i>	7
3.2	STRATEGY.....	7
3.3	CUSTOMER PRIORITIES.....	8
3.4	ASSET HEALTH PERFORMANCE COMMITMENTS AMP7 PERFORMANCE COMMITMENTS & OUTCOME DELIVERY INCENTIVES.....	9
3.5	COMPLIANCE OBLIGATIONS.....	9
3.6	AMP6 INVESTMENT AND PERFORMANCE.....	11
4	DEVELOPING OUR INVESTMENT PLAN	12
4.1	INVESTMENT CASE DEVELOPMENT PROCESS.....	12
4.1.1	<i>Head Office, Depots and other Non-Operational Buildings</i>	12
4.1.2	<i>Vehicle fleet</i>	13
4.1.3	<i>Health and Safety</i>	14
4.1.4	<i>Security</i>	16
4.1.5	<i>Water Resource Planning & Environmental Management</i>	16
4.1.6	<i>Business Improvement Work Streams</i>	17
4.1.7	<i>Project Work - Next Price Review PR24</i>	17
4.1.8	<i>Production Buildings</i>	18
4.2	DATA & DATA ASSURANCE.....	18
4.3	INVESTMENT CASE RISK IDENTIFICATION, VERIFICATION & NEEDS ASSESSMENT.....	19
4.3.1	<i>Risk Basis - Identification, Verification & Needs Assessment Methodology</i>	19
4.3.2	<i>Requirement/ Obligation Basis – Overview of Approach</i>	20
4.4	OPTIONEERING & INTERVENTION DEVELOPMENT.....	21
4.5	INTERVENTION COSTING.....	21
4.6	BENEFITS QUANTIFICATION.....	22
5	OUTCOME	23
5.1	OPTIMISATION & INTERVENTION SELECTION.....	23
5.2	ASSUMPTIONS.....	26
5.3	AMP 8.....	26
5.4	BASE MAINTENANCE.....	26
5.5	HISTORIC & AMP7 INVESTMENT COMPARISON.....	27
6	CONCLUSIONS	28

7	APPENDICES	29
7.1	APPENDIX A: LINE OF SIGHT	30
7.2	APPENDIX B: DATASETS	31
7.3	APPENDIX C.1: SELECTED RISKS	34
7.4	APPENDIX C.2: NON-SELECTED RISKS.....	36
7.5	APPENDIX D: OPTIONS CONSIDERED	39
7.6	APPENDIX E: INTERVENTIONS DEVELOPED	43
7.7	APPENDIX F: NON-SELECTED INTERVENTIONS.....	46

Tables

Table 1:	AMP7 management and general capital investment summary	3
Table 2:	AMP6 capital investment.....	11
Table 3:	Historic and forecast head office, depots and other non-operational buildings expenditure	12
Table 4:	Historic and Forecast Health and Safety Expenditure.....	16
Table 5:	Example of non-selected risk	20
Table 6:	Selected interventions in the management and general investment case.....	23
Table 7:	Water Services and Business Unit Allocation	25
Table 8:	Historical and AMP7 investment.....	27

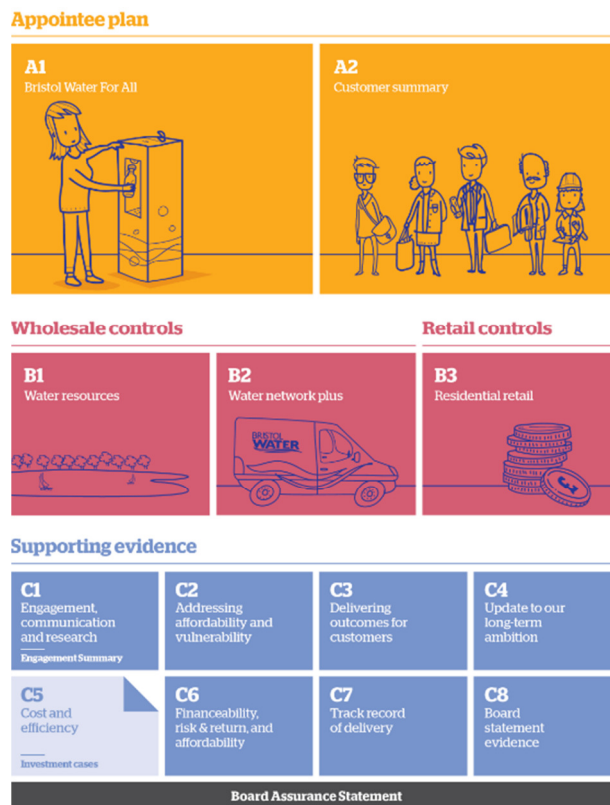
1 Foreword

The purpose of this document is to set out Bristol Water’s plan which will deliver improvements to our day-to-day business operations and continue our compliance with statutory requirements. We will invest in a range of areas under the heading management and general, to ensure we can continue to deliver and improve the levels of service we provide to our customers.

The purpose of this document is to set out our customer led, outcome focused plan which will mitigate risks posed by and associated with business operations and statutory obligations.

The investment case, one of 21, will summarise the facts, risks and investment requirements for management and general for the next review period for 2020 to 2025. This investment case will also summarise management and general investment for the current review period from 2015 to 2020 and our methodology for determining and delivering the future management and general strategy.

This investment case document is a technical annex to section C5B of our overall business plan submission, as illustrated by the diagram below:



This investment case is aligned to the Water Resources and Water Network Plus Wholesale Control aspects of our business plan. It is recommended that this investment case is read in conjunction with the PR19 Investment Case Summary Document¹ which outlines in detail our methodology for defining investment.

¹ Bristol Water PR19 Investment Cases Summary Document NTPBP-INV-PR1-0635
NTPBP-INV-MAN-0548 Management and General Investment Case

2 Executive Summary

To ensure we continue to deliver excellent services to our customers, we will deliver a number of improvements to our organisational capabilities and operational efficiency. We will achieve this by using our totex investment approach which includes investment in base maintenance and capital expenditure of £13.905m. We will deliver 31 improvement and compliance initiatives across eight management and general areas. When considering our efficient and innovative approach we plan to deliver our management and general capital programme for £12.793m.

At Bristol Water we have completed an extensive customer engagement programme which has identified sets of key customers priorities and outcomes. We must ensure we continue to develop and improve our organisational capabilities and provide the necessary supporting infrastructure to deliver these priorities and outcomes.

In July 2018, the Institute of Customer Service released its customer Satisfaction Index² which named Bristol Water as the best water company for customer service for the second time in a row. We were also named as the most trusted company in the utility sector, and as being among the top three of all utility companies for customer service.

This investment case utilises a totex approach to determine the specific management and general investment requirements to ensure we can sustain and improve upon the excellent services we provide to our customers through our organisational capabilities, supporting infrastructure, and operational efficiency.

The investments summarised within this investment case are diverse, and relates to a number of functions across the Bristol Water organisation. Investment is necessary to continue to meet our customers' expectations for high levels of service and to allow our employees to perform their daily duties proficiently. The investment presented for AMP7 will ensure these levels of service can be maintained and that we can fulfil strategic outcomes.

The interventions that have been identified will maintain asset health, sustain and improve the quality of service we provide, and to fulfil a number of statutory obligations. A comprehensive set of studies and assessments have been carried out across eight management and general areas to determine the required investment for AMP7.

Our AMP7 management and general investment will ensure essential maintenance, health and safety and improvement interventions for offices, depots and non-operational buildings are fulfilled, to address and mitigate the evaluated risks to the health, safety and welfare of employees and members of the public.

Our most significant AMP7 management and general investment will be in our vehicle fleet. This investment reflects advances in vehicle technologies which have impacted upon the assessment of economic efficiencies and replacement cycle. Our investment represents this revised economic

² Institute of Customer Service, July 2018, UK Customer Satisfaction Index (UKCSI)

assessment, and ensures our operation is efficient, reliable and compliant with our fleet policy though the replacement of non-compliant vehicles.

Our AMP7 management and general investment will also ensure we fulfil statutory and regulatory obligations in terms of written plans, covering requirements to produce a drought plan, water resources management plan, and regulatory price review business plan, from 2020 to 2025.

Should we fail to invest in our organisational capabilities and supporting infrastructure, the key risks are that we will not meet our customers’ priorities and outcomes, and that we would not comply with statutory and regulatory obligations.

We plan to invest £13.905m from 2020 to 2025 on developing and improving our capabilities and providing the necessary supporting infrastructure.

We have set ourselves a challenging target of reducing costs by 8% during AMP7. This will be achieved by delivery of our business transformation programme and result in a post-efficiency investment of £12.793. A summary of our AMP7 investment by management and general area is given in Table 1.

Table 1: AMP7 management and general capital investment summary

No.	Management and general AMP7 capital investment area	Capital investment (£)
1	Head office, depots and other non-operational buildings	764,000
2	Vehicle fleet and equipment	5,000,000
3	Health and safety	1,416,000
4	Security	635,000
5	Water Resource Planning & Environmental Management	1,140,000
6	Business improvement work streams	950,000
7	Project Work – Next Price Review (PR24)	2,500,000
8	Production Buildings	1,500,000
-	Management and general capital investment (pre-efficiency)	13,905,000
-	Management and general capital investment with 8% capex efficiency	12,792,600

Costs are allocated across the Water Resources, Raw Water Distribution, Water Treatment, and Treated Water Distribution business units. The majority of investment is related to maintaining the long term capability of our infrastructure assets, with a small proportion related to other capital expenditure – of our non-infrastructure assets.

3 Background To Our Investment Case

3.1 Context

The management and general investment case covers general projects and programmes of work and the day-to-day management of the business. The investment covers a range of area, and includes a number of disciplines across our organisation. Investment is required to develop our organisational capabilities and improve our operational efficiency, allowing employees to work proficiently and to continue providing high levels of customer service, and to deliver against our customers' priorities.

We have identified interventions to maintain asset health, sustain and improve the quality of service we provide, and to fulfil a number of statutory obligations. The intervention scopes have been developed based upon a comprehensive set of studies and assessments across eight management and general areas, and which have been used to determine the required investment for AMP7

The following sections summarise the management and general areas and the associated AMP7 investment.

3.1.1 Head office, depots and other non-operational buildings

Investment in our head office, depots and other non-operational buildings is required to keep these sites safe and in good working order for our employees and visiting members of the public. There are many buildings in this category that provide safe working environments for employees and secure enclosures for our pumping and water treatment assets, so effective maintenance of these buildings is essential.

We undertake building inspections as part of our routine scheduled maintenance programme, through which we identify any issues and allows us to determine any remedial actions. Our investment will allow us to continue to maintain our head office, depots and other non-operational buildings as safe places to work and to keep them in good working order. This will ensure that risks to the health, safety and welfare of employees and visiting members of the public will be effectively managed. It will also ensure that these buildings provide secure protection for our assets, and that we fulfil our associated legal obligations.

3.1.2 Vehicle Fleet and Equipment

Our vehicle fleet strategy is a key strand in our transformation programme, through which we will build and enhance our organisational capabilities. We will expand the capacity of our mobile workforce, so that we can respond quickly and comprehensively to operational issues, and bolster our ability to fulfil asset maintenance requirement and effectively manage incidents.

Responding to issues in a swift and comprehensive manner will allow us to undertake the necessary remedial actions before customers are impacted. For example by utilising specialist under-pressure tools and equipment within our fleet, we can provide a rapid response to repair mains bursts before customers lose their supply.

We currently operate a fleet of circa 290 vehicles that enable our mobile workforce to carry out daily operational duties and respond effectively to any incidents. It is important that these vehicles, and the tools and equipment they carry, are replaced and renewed in line with an assessment of lifecycle cost and business needs..

In addition, we have a legal obligation under the Goods Vehicles (Licensing of Operators) Act 1995 to ensure our vehicle fleet is maintained in a fit and serviceable condition. We also must ensure our fleet complies with vehicle safety and emissions requirements as tested through the MOT certification process. To this end, we manage our fleet in line with the Driver and Vehicle Standards Agency (DVSA) guidelines³ for maintaining roadworthiness of commercial goods and passenger carrying vehicles.

Our investment in the renewal and expansion of our fleet will ensure the vehicles remain safe, reliable, and efficient. Our investment will also allow us to expand the capacity of our mobile workforce, and to employ the latest techniques and methods to inspect, maintain and repair our assets, by investing in the supporting specialist vehicles, tools and equipment

3.1.3 Health and Safety

Health and safety is of paramount importance to us, and we are committed safeguarding the health and safety of all employees, contractors and members of the public.

In our 2017/18 Annual Report⁴, our Chief Executive Officer, Mel Karam, stated: ***“We place a strong focus on the health, safety and wellbeing of our staff, contractors and public. Health and safety remains our number one priority and we continue on the journey towards zero injuries. The message is loud and clear from the top of the organisation, health and safety underpins everything we do and must be inherent in our culture. To this end, we launched an internal campaign ‘Take 5 for Safety’ to bolster our safety messages to all staff and we work with our contractors to ensure we are aligned at all levels”.***

To ensure we are able to continue meet and improve our safety standards, the following areas have been identified as requiring attention in AMP7:

- Active Fire Prevention
- Asbestos Removal
- Working at Height Improvements
- Confined Spaces
- Chemical Plant
- Electrical Safety
- Hazard Rectification
- Personnel records management system upgrade (including records health and safety-related training etc.)

³ Driver and Vehicle Standards Agency (DVSA), 2018, Guide to maintaining roadworthiness. Commercial goods and passenger carrying vehicles.

⁴ Bristol Water, July 2018, Annual Report and Financial Statements 2017/18

This investment case does not include maintenance of health and safety assets due to damage or deterioration, as this is covered within our other investment cases. Our trunk mains investment also includes interventions to address health and safety risks in relation to pipe bridges. This investment will deliver a programme of surveys of circa 330 pipe bridges and production of an inventory for these assets. The investment will also allow us to install security measures at key locations to prevent third party access onto pipe bridges (see intervention ref. 01.001.02 'Pipe Bridge Health & Safety Improvements' contained within our Trunk Mains Investment Case).

3.1.4 Security

Security interventions in AMP7 aim to ensure compliance with government standards and continue to provide customers with safe, secure and reliable drinking water. We perform regular assessments of our sites and the condition of our security assets, to ensure security measures are effective and to prevent unauthorised access. Investment in security is essential to comply with government standards approved by the Department for Environment, Food & Rural Affairs and prevent unacceptable risks by potable water contamination.

3.1.5 Water Resource Planning & Environmental Management

All water companies are required to produce a Water Resources Management Plan and update it every five years, to ensure customers and the environment are protected with a plan to balance supply and demand. In AMP7 we are required to deliver a revised Water Resources Management Plan in 2024. Therefore we have included our investment requirements for AMP7 to ensure we can deliver against this requirement.

Water companies are also required to prepare and maintain a Drought Plan on a five yearly cycle. The plan's purpose is to demonstrate how Bristol Water will operate in prolonged dry periods resulting in diminished water resources. The impact to the environment is also assessed to mitigate any negative effects that could occur from drawing more water from sources. We are required to deliver a revised Drought Plan in 2023. Therefore we have included our investment requirements for AMP7 to ensure we can deliver against this requirement.

To ensure we achieve and maintain internationally-recognised standards in relation to environmental management, we will fully align our environmental management system against the ISO 14001 standard for Environmental Management Systems. We will implement this system and verify the completeness and adequacy through ISO 14001 certification.

3.1.6 Business Improvement Work Streams

We are constantly investing in business improvements that improve our efficiency, ways of working and cost management. These improvements work streams allow employees to provide an improved level of service to our customers by utilising processes such as new technology, management structure, and improved methods of customer engagement.

3.1.7 Project Work – Next Price Review (PR24)

The Price Review is an Ofwat-driven activity where water companies outline the plans, projects and investments that will continue to provide high levels of service to customers. The Price Review process ensures customers' interests are balanced with the need to ensure water companies are able to finance the delivery of water services, and also ensures they are able to meet their other legal obligations, including environmental and social duties. These plans are checked for aspects such as efficiency, cost benefits, resilience and fulfilling statutory obligations. The next price review is due to be submitted in 2024, and therefore we have included our investment requirements for AMP7 to ensure we can deliver a high quality PR24 business plan for AMP8.

3.1.8 Production Buildings

Production buildings are operational buildings that support, but are not directly involved in, the water treatment and distribution processes. We manage circa 380 buildings over more than 250 sites. Our AMP7 investment will ensure we can maintain the health of our production building assets and manage risks associated with their deterioration. Maintaining our production buildings will ensure asset health deterioration issues are addressed, such as:

- Ingress of water due to roof failure, which may result in water damage including damage to electrical equipment, and which may lead to hazards such as slip, trips and falls, or electrocution;
- Damaged to fences, which may result in members of the public or livestock accessing our restricted sites, increasing the risk of them being harmed and also of our water supplies being contaminated; and
- Building damage due to age-related deterioration, vegetation damage, etc., which may lead to unsafe areas where our employees operate.

Our production buildings include workshops, storage buildings, kiosks and large prefabricated buildings. The internal components of these buildings include lighting, heating, ventilation, air conditioning, doors, cranes and lifting systems, furniture, kitchen equipment, personal hygiene facilities, domestic water heating and storage, and emergency shower and eye wash facilities.

3.2 Strategy

Developing the investment needs for our management and general investment case is underpinned by our long term corporate strategy which has the vision “**Trust beyond water-we provide excellent experiences**”. Our Outcomes Delivery Framework together with our Strategic Asset Management Plan

provide the strategic framework that supports this vision and enables investment in our management and general investment case to clearly focus in delivering against outcomes.

Our long term strategy, as set out in the Outcome Delivery Framework (Section C3 of our Business Plan), has a focus on resilience and a growing need to ensure that our assets are, and remain, well maintained and effective in meeting our performance requirements. There are three strategic drivers identified that together, ensure we meet our current and future needs for customers and stakeholders. These are:

- **Operational Resilience** - which have performance commitments to reflect reliability, resilience and quality of water.
- **Customer Focused** - performance commitments to reflect customer service and affordability.
- **A Sustainable Business** - performance commitments to reflect the environment representing our community and sustainable resources.

Within this strategy there are four outcomes: excellent customer experiences; local community and environmental resilience; Safe and Reliable supply; and corporate and financial resilience. All of these outcomes will be influenced by our investment needs for management and general, which in most cases is required to support the adoption of good practice Asset Management and delivery of our asset focussed activities.

We need to ensure that planned investment is sufficient for the continuation of business as usual activities and routine and reactive maintenance, and the continued provision of high quality service levels and potable water to our customers.

3.3 Customer priorities

Customer priorities relating to Bristol Water's outcomes and performance commitments have been determined through our extensive programme of customer engagement and research. During the development of our business plan we have engaged with over 37,000 customers and conducted over 50 pieces of research. By delivering customer engagement, we have ensured that we can build on the customer insights that we have gained, producing a business plan influenced by our engagement events. This ensures that at Bristol Water we have engaged effectively with our customers on longer-term issues, and have taken into account the needs and requirements of different customers including those in vulnerable circumstances and also our future customers.

Through this process our customers have told us that their top priorities have remained largely unchanged from PR14 and have been identified as follows:

- You can get a bill you can afford
- Keeping the water flowing to your tap
- Help to improve your community
- Save water before developing new supplies
- You get the best possible experience every time you need us

Our engagement with our customers has resulted in the development of four specific outcomes for PR19, which capture what our customers and stakeholders have said; these are as follows:

- Excellent Customer Experiences
- Safe and Reliable Supply
- Local Community and Environmental Resilience
- Corporate Financial Resilience

In order to deliver our customers' priorities and outcomes we will measure progress via twenty six performance commitments for which we have set delivery targets.

3.4 Asset Health Performance Commitments AMP7 Performance Commitments & Outcome Delivery Incentives

The health of our assets is a key element in delivering resilient water services to our customers. Our investment in management and general will help ensure our assets are being maintained appropriately for the benefit of current and future generations.

While there are no direct links to performance commitments through our management and general investment case, the interventions identified are essential for us to delivery targeted improvements to the way we work, comply with statutory obligations, and for staff to conduct their work in a safe and efficient manner. The management and general interventions therefore underpin our ability to achieve our performance commitments.

The management and general interventions also underpin our health and safety performance. We have a legal duty of care to provide our staff with basic needs such comfortable working conditions and necessary facilities and equipment to carry out their work. This includes assets such as head office and other production/non-production buildings. We must also provide safe working conditions and protection from accidents and other adverse effects.

3.5 Compliance Obligations

Statutory and compliance obligations have influenced the development of interventions in this investment case and the investment for AMP7. There are a number of pieces of legislation that put a statutory obligation on all employers to protect the health, safety and welfare of their employees and members of the public. This includes a safe working environment for employees (office and field based) and safe assets that may be accessed by members of the public. Applicable legislation includes:

- The Health and Safety at Work Act 1974
- The Management of Health and Safety at Work Regulations 1999
- The Workplace Regulations 1992
- Active Fire Prevention – The Regulatory Reform (Fire Safety) Order 2005
- Asbestos Removal – The Control of Asbestos Regulations 2012
- Working at Height Improvements – The Work at Height Regulations 2005

- Confined Spaces – The Confined Spaces Regulations 1997
- Chemical Plant – Control of Substances Hazardous to Health Regulations 2002
- Electrical Safety – The Electricity at Work Regulations 1989
- Goods Vehicles (Licensing of Operators) Act 1995
- Hazard Rectification – The Health and Safety at Work Act 1974
- Lifting Operations and Lifting Equipment Regulations 1998
- Control of Substances Hazardous to Health Regulations 2002

In particular, we have a statutory obligation under the Health and Safety at Work Act 1974 to ensure that our assets are safe for those working on or near them or anyone who may be on or near them. This includes all assets that we own and operate, including: network assets that are required to provide our customers with high quality potable water; the buildings which house our workforce who provide our support services; and the fleet of vehicles we use to get our personnel to where they need to be to support our customers.

Additionally, we have a statutory obligation under the Water Industry Act 1991 to ensure that we develop and maintain an efficient and economical system of water supply to our customers. Section 208 of this Act (Security and Emergency Measures Direction (SEMD)) places an obligation on us to ensure that our potable water sites are suitably protected to an approved standard and the standard applied has been approved by Water UK Council and endorsed by the Department for Environment, Food & Rural Affairs.

Furthermore, we have a statutory obligation under the Water Act 2003 to produce a Water Resource Management Plan at least every five years, which set out how we are going to ensure we meet the demand for water that we expect will arise in the future. The next revision to our Water Resource Management Plan is due in 2024. We are also obliged under this Act to prepare and maintain a Drought Plan, which lays out our approach for managing drought events that are outside the scope of normal water resource management. The next revision to our Drought Plan is due in 2023.

Through our management and general investment case we will ensure compliance with these obligations. This investment is explained in more detail in Section 4.

3.6 AMP6 Investment and Performance

A summary of our AMP6 investment in management and general is provided in Table 2 below. Our investment in AMP6 will also underpin our performance in AMP7.

We have re-categorised data used in line with the scope of our investment cases. For historic data we have used the wholesale cost assessment (table 1 and 2 of the 16/17 return). Forecast data has been derived from PR19 data table (WS1 and WS2).

Table 2: AMP6 capital investment

Year	Management and general capex (£m)
2015/16 actual	1.869
2016/17 actual	1.632
2017/18 actual	3.986
2018/19 forecast	5.056
2019/20 forecast	2.821
AMP6 forecast	15.364

Our AMP6 investment covers a range of improvements and statutory obligations under management and general. These improvements, coupled with our operational maintenance activities, have allowed us to sustain our business as usual capabilities and deliver targeted improvements to the health of our assets and our ways of working.

4 Developing Our Investment Plan

4.1 Investment Case Development Process

In this section, we set out the evidence for our management and general investment requirements in terms of cost and the need to maintain our assets to sustain our performance. The evidence to support our investment requirements is obtained from a number of sources, primarily historical activities and costs, and investment planning analysis.

4.1.1 Head Office, Depots and other Non-Operational Buildings

Our non-operational buildings include our head office and depots, and circa 105 buildings in total. These buildings serve a variety of purposes, including the protection and security for our pumping and water treatment equipment. A number of buildings we own are rented out to tenants, which generates rental income. We have steadily reduced the number of these rental properties each AMP as the buildings become surplus to requirement or where we no longer operate in an area. Currently we have 28 rental properties in our portfolio, and we must still maintain these effectively.

We manage inspections of our buildings as part of our routine scheduled maintenance programme. Any issues identified are recorded in an inspection report and are logged on our facilities works management system. If the required works cannot be rectified easily, the issue is logged on the operational risk register. A job will then be raised and allocated to a technician or the contractor undertaking the survey to resolve. Any issues that can be rectified in-house will be addressed by one of our maintenance teams, otherwise a specialist contractor will be used. Our asset and works management register stores information related to our non-operational buildings assets, such as location, asset type, scheduled/reactive/proactive maintenance, cost centre code, etc..

Failure to invest in this asset category will impact on duty of care that we must provide to our staff, and may result in non-compliance with Health and Safety legislation. Deteriorating office buildings may also affect the health and wellbeing of our employees, potentially reducing performance and ultimately levels of service to the customer.

As summarised in Table 3, significant work was undertaken during AMP5 for modifications and upgrades of our head office, which were completed during AMP6. There are no planned major non-operational buildings modifications in AMP7, hence overall our investment forecast for this area is significantly reduced.

Table 3: Historic and forecast head office, depots and other non-operational buildings expenditure⁵

Building type	AMP4	AMP5	AMP6	AMP7
Head Office	£52,996	£8,438,455	£938,608	-
Depots and other non-operational buildings	£1,748,738	£1,768,613	£651,732	£764,000
Total non-operational buildings	£1,801,734	£10,207,068	£1,590,340	£764,000

⁵ Price base 2012/13

Our investment in non-operational buildings will allow us to manage risks associated with deteriorating assets and to maintain an efficient service. Interventions have been developed on the basis that they address asset maintenance requirements for our non-operational buildings, to ensure the health and wellbeing of our employees and to maintain service to our customer.

A capital investment of £0.764 (pre-efficiency) is required for AMP7 (5.5% of the AMP7 management and general capital investment).

4.1.2 Vehicle Fleet and Equipment

Our vehicle fleet is a key strand in our transformation programme, through which we will build and enhance our organisational capabilities. In AMP7 we will continue to expand the capacity of our mobile workforce, so that we can provide a comprehensive response to operational issues, and to bolster our ability to fulfil asset maintenance requirement and effectively manage incidents.

We currently manage a fleet of 289 vehicles. These vehicles encompass:

- 176 vans;
- 86 cars;
- 22 light goods vehicles; and
- 5 trailers.

Effective management of our vehicle fleet is critical to our key operational functions, and our AMP7 investment ensures we can deliver commitments to customers and comply with statutory obligations. Our vehicles allow our employees to carry out their basic duties, ensuring continued supply of water is maintained and customers receive high levels of service. The characteristics of the vehicles and equipment in our fleet are specific, and allow our mobile workforce to transport the specialist tools and equipment they need to undertake their operational duties effectively. Our AMP7 investment will ensure these vehicles, and the tools and equipment they transport, are replaced and renewed in line with an assessment of lifecycle cost and business needs.

We maintain a register for all fleet vehicles, which holds the records of each vehicle including:

- ID number;
- Vehicle cost;
- Registration number;
- Class code;
- Registration date;
- Mileage/current odometer reading;
- Driver name;
- Owner code; and
- CO₂ emissions.

This information is used for a variety of purposes such as analysing asset utilisation and performance. Details of reactive work are recorded following vehicle breakdowns, faults detected whilst undertaking service/repair work, or faults reported by the driver. Routine maintenance is undertaken in accordance with the vehicles' service schedules along with the MOT due dates.

Our vehicle fleet is an integral part of our operational activities, and without it we would not be able provide our customers with high levels of service nor meet statutory obligations. Our AMP7 investment ensures we have a safe, reliable, and efficient fleet of vehicles. Our AMP7 investment also ensures we have the supporting tools and equipment to employ the latest techniques and methods to inspect, maintain and repair our assets. The investment to renew our fleet and expand our mobile capabilities allows us to maintain high levels of customer service, by responding to issues in a swift and comprehensive manner to undertaking the necessary remedial works.

A capital investment of £5.000m (pre-efficiency) is required for AMP7 (36% of the AMP7 management and general capital investment). This is an increase of £2.735m on the AMP6 investment of £2.265m, and allows us to not only renew our fleet, but to also expand the capacity of our mobile workforce, and to provide a quicker, more comprehensive response to operational issues before they impact our customers.

We are currently working with Bristol City Council to ensure the long-term resilience of our vehicle fleet policy. For example, if Bristol were to introduce a Clean Air Zone, then electric vehicles could become an essential part of our fleet, and infrastructure for compatible electrical charging points for these vehicles will be necessary. Currently, electric vehicles have drawbacks such as towing regulations and range which is more prevalent when using large, heavy machinery. We will continue to review our vehicle fleet policy so we can to adapt to any such changes that may occur.

4.1.3 Health and Safety

The health and safety area covers all areas of our operation, as it is important that employees have access to equipment and spaces to work that are fit and well maintained and in a condition that does not pose a risk to their safety or that of the general public. As with our non-operational buildings, we undertake inspections as part of our routine scheduled maintenance programme, which identifies any necessary works.

Our health and safety investment area covers a diverse range of functions and departments. It also support our health and safety drives, such as our current 'Take 5' initiative which promotes giving all work activities a final check to identify and control any potential hazards, and aligns with our overall strategy to make ourselves a zero harm business.

The following investment areas have been identified to ensure we comply with our duty of care and statutory obligations, to allow us to continue to work towards being a zero-harm business.

Active Fire Prevention

As building owners, we have a legal duty to comply with the Regulatory Reform Order 2005. Article 17 of the Fire Safety Order requires a suitable maintenance regime to ensure relevant equipment is kept in an efficient state. This includes fire doors and escape doors. We are installing fire alarm detection systems throughout a number of our sites and will continue to do so. Old fire alarm systems will also be

upgraded as technology evolves and requirements relating to monitoring and reacting to incidents efficiently grow. Article 18 of the Fire Safety Order requires the responsible person to appoint one or more competent persons to assist in undertaking the preventive and protective measures. There are currently circa 35 sites covered with a fire alarm system.

Asbestos Removal

A number of our assets contain asbestos, making it mandatory that these assets are properly managed and maintained in accordance with statutory obligations. As an employer we have specific duties to:

- Protect employees from asbestos exposure;
- Provide company procedures for employees to follow for incidents and decontamination; and
- Issue the correct personal protective equipment when it is required.

All of our asbestos management surveys and associated documents are now kept online, via the Healthy Buildings International live portal, which we subscribe to. The frequency of re-inspection of sites has been determined in line with our Asbestos Management Policy, and ranges from one to three years depending on the risk assessment score.

Working at Height Improvements

We have many assets that require us to work at height and thus present a Health and Safety risk to employees. It is paramount that staff can work in a safe environment to carry out inspections and other essential tasks.

Cascade System Upgrade

We will upgrade our personnel and human resources management system to ensure all employee data is secure and up-to-date. A key function of this system is to record health and safety-related records.

Confined Spaces

In this instance, confined spaces refer to abandoned fuel tanks and undergrounds chambers that, if not fully decommissioned, will require structural inspections to monitor deterioration and risk flooding the structure. Our investment will see these structures decommissioned, and in doing so will address the associated risks.

Chemical Plant

The chemicals required to treat water can be extremely hazardous when handled incorrectly, and therefore great care is taken to prevent any spillage or contamination, in compliance with the relevant regulations at all relevant sites. Investment in this area is to ensure any chemical spills can be contained quickly and efficiently without contaminating surface or potable water.

Electrical Safety

We have a large number of electrical assets and equipment which we use to deliver and monitor water treatment and distribution. Investment is therefore essential to make certain that all electrical equipment is functioning correctly without placing employees in danger.

Hazard Rectification – reporting any hazards

When a hazard is first identified it is reported immediately. Our first priority is to make the area safe to prevent harm to people. We then review options for addressing the hazard. Options will range from permanent fixes to identifying requirements for further investigation.

In AMP6 we undertook a comprehensive electrical safety survey at all treatment works on low voltage electrical equipment. This identified a significant number of hazards relating to equipment not being safe to current day standards, the majority of which will be addressed in AMP6. Further investment in AMP7 is required to identify hazards related to other assets. However investment will be less than in AMP6 owing to the amount of work already undertaken. Expenditure is summarised in Table 4.

Table 4: Historic and Forecast Health and Safety Expenditure

AMP4	AMP5	AMP6	AMP7
£182,910	£447,719	£1,713,324	£1,416,000

A capital investment of £1.416m (pre-efficiency) is required for AMP7 (10.2% of the AMP7 management and general capital investment)

4.1.4 Security

Investment in security measures is required to prevent unauthorised access to potable water, to our assets and to protect employees. We have a statutory duty under the Security and Emergency Measures Direction (SEMD, section 208 of the Water Industry Act) to ensure that potable water sites are suitably protected to an approved standard and the standard applied has been approved by Water UK Council and endorsed by the Department for Environment, Food & Rural Affairs.

In AMP7 we will upgrade all cover alarms on ‘Basic and Basic Plus’ category service reservoirs to the same standard as those on enhanced service reservoirs. We will also replace the master key system on all sites, as the patent has expired on the current system and it does not meet our standard of best practice.

A capital investment of £0.635m (pre-efficiency) is required for AMP7 (4.6% of the AMP7 management and general capital investment). This is a reduction of £1.877m on the AMP6 investment of £2.512m.

4.1.5 Water Resource Planning & Environmental Management

As a key part of long-term management and planning for public water supply, water companies are required to produce a Water Resources Management Plan and update it every five years. Water Resources Management Plans set out a company’s intended approach for at least a 25 year period, to ensure that the long-term balance between supply and demand is maintained in a way that delivers best value to customers and the environment. The plans factor in any projected increase in demand for water over the planning period, as well as the impact of climate change on available resources. Water Resources Management Plans are produced following guidance provided by the Environment Agency, and are approved by the Secretary of State for the Environment. In AMP7 we are required to deliver a

revised Water Resources Management Plan in 2024. Therefore we have included our investment requirements for AMP7 to ensure we can deliver against this requirement

All water companies are required to prepare and maintain a Drought Plan on a five yearly cycle. Our Drought Plans outlines our strategy for managing operations through prolonged dry periods that could result in shortages in water resources. They identify the actions which would be required in order to maintain supplies during a drought situation, and how those would be communicated to customers. They also set out how we would assess the environmental impact of any actions taken, and what would be done to mitigate any adverse effects arising from those actions. Droughts Plans are produced following guidance provided by the Environment Agency, and are approved by the Secretary of State for the Environment. We are required to deliver a revised Drought Plan in 2023. Therefore we have included our investment requirements for AMP7 to ensure we can deliver against this requirement.

We will also fully align our environmental management system against the ISO 14001 standard for Environmental Management Systems. We will implement this system and verify the completeness and adequacy through ISO 14:001 certification.

A capital investment of £1.140m (pre-efficiency) is required for AMP7 (8.2% of the AMP7 management and general capital investment). This is a reduction of £0.170m on the AMP6 investment of £1.259m.

4.1.6 Business Improvement Work Streams

We have identified a number of business improvement initiatives that will focus on our processes, ways of working, how we manage costs, and whether they are organised in the most effective way to meet the challenges of the future. These business improvement initiatives will build upon our AMP6 improvements. The scope of improvement initiatives is broad, and we have therefore organised them into a number of work streams to cover the primary areas. Each of the work streams will have a sponsor and lead, and will be managed as part of a wider business improvement programme to ensure interdependencies are managed.

A capital investment of £0.950m (pre-efficiency) is required for AMP7 (6.8% of the AMP7 management and general capital investment). This is a reduction of £0.698m on the AMP6 investment of £1.648m

4.1.7 Project Work - Next Price Review PR24

The Price Review is an Ofwat driven activity where water companies outline the plans and projects that will continue to provide high levels of service to customers. The Price Review process ensures customers' interests are balanced with the need to ensure we are able to finance the delivery of water services, and also ensures we are able to meet their other legal obligations, including environmental and social duties. Ofwat set the framework for these plans so that companies innovate to improve performance of the whole sector and stretch the current boundaries for service, delivery and efficiency. These plans are checked for aspects such as efficiency, cost benefits, resilience and that we meet our statutory obligations. Ofwat scrutinise and challenge plans to make sure that they are efficient, affordable, provide resilience. The next price review is due to be submitted in 2024, and therefore we have included our investment requirements for AMP7 to ensure we can deliver a high quality PR24 business plan for AMP8.

A capital investment of £2.500m (pre-efficiency) is required for AMP7 (18% of the AMP7 management and general capital investment). This is a reduction of £2.140m on the AMP6 investment of £4.738m.

4.1.8 Production Buildings

We monitor and maintain circa 385 buildings over more than 250 sites. We have identified several buildings that are not in a state that is suitable for every day work.

In AMP7 we will undertake surveys of all production buildings to gain a better understanding of their condition. This will allow risk-based priority lists of remedial work to be created, and essential works to be undertaken in AMP7. We will also use the data gather from the surveys to establish the required remedial works for our production buildings in AMP8 and beyond.

A capital investment of £1.500m (pre-efficiency) is required for AMP7 (10.8% of the AMP7 management and general capital investment).

4.2 Data & Data Assurance

The development of our investment cases is dependent on having consistent, accurate and assured data. We therefore recognise that we must be able to demonstrate the quality of the data and information used in the development of our investment cases.

Wherever possible, we have utilised data from our core company systems in order to undertake our analysis and we have sense checked the quality of the data as we have used it.

However, in addition, we have applied a data assurance methodology. We have assessed data quality in terms of completeness, accuracy and reliability. In addition, the methodology also assesses whether data is used as part of the Annual Performance Report to Ofwat, and hence already subject to existing Annual Performance Report assurance mechanisms.

In total we have developed twenty one investment cases. The values of these investment cases range from less than £1m to over £37m. Our overall capital investment plan totals circa £212m.

We have selected a sample of nine investment cases, and have applied detailed data assurance based on their value and complexity. The total value of these nine investment cases represents 66% (circa £140m) of the total capital investment plan, and represents two hundred and eighty six individual data types. We have evaluated all two hundred and eighty six data types and we have evaluated them for quality and their use in the Annual Performance Report process. The overall data quality assessment identified 93% of the data as being good quality, and 55% as having been used and assured through the Annual Performance Report process.

This investment case was not included as part of the sample of nine investment cases. We will continue to focus on improving the quality of our data and the associated assurance processes.

4.3 Investment Case Risk Identification, Verification & Needs Assessment

The management and general interventions were developed from two approaches; on a risk basis, or on the basis of our requirements and obligations. All of the generated interventions are either considered mandatory as they are a requirement from a regulatory body, and/or are considered industry best practice to mitigate risks and improve our business performance and capabilities.

4.3.1 Risk Basis - Identification, Verification & Needs Assessment Methodology

The methodology of Risk Identification, Risk Verification and Needs Identification was followed, as described in the PR19 Investment Cases Summary Document.

The steps covered in this methodology aim to ensure that:

- the risks that we are currently facing are captured in a single risk register;
- each risk is assessed and verified to determine details about the nature and magnitude of the risk and whether any mitigation is currently planned in this AMP period;
- each risk is scored on a common basis to allow risks to be compared;
- the most significant risks are identified, and that for each a clear and uniquely referenced statement of need is produced to define the problem as clearly as possible, and to identify what benefits or Performance Commitments the mitigation of this risk will achieve; and
- the need statement defines the problem as clearly as possible and identifies what impacts are associated with the risk and the benefits or performance commitments the mitigation of this risk will achieve. The impacts and benefits will be informed by any performance data associated with the risk.

There were 27 risks identified in the strategic risk register associated with this investment case. Every risk went through a process of assessment, scoring, and review following the methodology.

The risk score is the product of the likelihood and impact assessment of which each is scored 1 to 5 to provide a potential maximum risk score of 25. Risks scoring 15 to 25 are the most significant strategic risks, and these were developed into needs statements.

Those scoring 10 or 12 were subject to a further round of review and where it was considered that mitigation of the risk will enhance our ability to meet our performance commitments, the risk was selected and developed into a needs statement.

The risks scoring 1 to 9 are considered to be risks of a lower priority and were therefore not considered further as part of the PR19 investment planning process. An example of a non-selected risk is given below in Table 5:

Table 5: Example of non-selected risk

SRR ID	IC No	Location/Zone	Revised Risk Description	Likelihood	Human Health / Environment	Ease to Resolve	Publicity & Reputation	Regulatory Impacts	Customers Impacted	Max Impact	Risk Score
SRR826	33	Banwell TW	IF chemical spill during chemical delivery of Phosphoric Acid THEN no containment and likely contamination of surface waters (Banwell TW)	2	3	2	1	2	1	3	6

In this case, assessment of the risk determined that the chemical spill was not likely to occur with the current safety measures and therefore was allocated a likelihood score of 2. The impacts of such a failure were assessed to be significant as there is the potential to cause serious injury to staff and/or minor impact on the environment primarily because of the low chance for contamination of water courses as current delivery area is in the car park.

Any non-selected risks will continue to be monitored and assessed as part of the live and on-going business as usual risk management process. Where this process requires these risks to be mitigated, we will respond with appropriate action, i.e. base maintenance. The development our business as usual risk management process is on-going and we are looking to innovate by developing smarter systems to optimise the process.

Seven risks were selected and developed into need statements. The risk descriptions, scoring and associated needs statements are captured in the strategic risk register. These selected risks are provided in Appendix C1

20 risks were not selected and these risks return to being monitored and reviewed under our business as usual risk management process. These non-selected risks are provided in Appendix C2.

The ‘Line of Sight’ for the whole process, beginning with the selected risks, the source of the risk, a record of source documents used to verify the risks, and the needs statements, is captured in Management and General Interventions Register .

4.3.2 Requirement/ Obligation Basis – Overview of Approach

The majority of management and general interventions were developed from a requirement or obligation to fulfil requirement from a regulatory body, represent industry best practice to mitigate risks, or to improve our business performance and capabilities.

All interventions developed on the basis that they are a requirement or obligation have been subject to a thorough internal check and review process. This process included reviews by a Heads of Department, Project Directors, and Executive Director, with updates to the scopes and costs as instructed following these review sessions.

4.4 Optioneering & Intervention Development

The costs of management and general interventions were developed by reviewing historic expenditure for previous AMP cycles and consulting with stakeholders to identify interventions that are required to maintain the current level of business functionality and operational efficiency. As a result of this process multiple options were not developed for this investment, but the interventions were scrutinised and reviewed both internally and at executive level.

4.5 Intervention Costing

The interventions costs within Management and General investment case have been developed from bottom-up assessment of capital expenditure based on historical information, and on quotation received from our suppliers. Associated operational costs are business as usual.

The exception to this is the cost basis for our vehicle replacement. To determine which supplier and manufacturer of vehicle represents best overall value in term of expenditure, efficiency and emissions, we undertook an extensive tender process beginning with seventeen suppliers, reduced to five for the final analysis. The comprehensive evaluation included:

- Purchase Price;
- Fuel;
- Maintenance;
- Road fund licence;
- Depreciation and residual value ;
- Expenses and benefits (P11D); and
- Employers' National Insurance Contribution.

The result of the process was that Peugeot provided the most economically advantageous tender, on the basis of: the highest non-price score; the second most competitive price submission; and the following additional benefits:

- Fulfils the set Bristol Water operational requirements;
- Provides a saving of £245,794 based on purchase price alone in AMP 6;
- Provides a saving of £343,229 based on total cost of ownership over 4 years;
- Fixed pricing each year over the contract;
- Free of charge extras;
- Demonstrator car, replaced each year for the length of the contract;
- Local coverage;
- Aftersales support; and
- Able to supply an environmental vehicle range including electric cars (should these be required e.g. for suitability trials).

4.6 Benefits Quantification

Management and general interventions provide a baseline platform for a number of performance commitments. However, it does not contribute directly to any performance improvements. There are no effects on performance commitments, other than providing the foundation for interventions that are designed to deliver improved performance.

5 Outcome

5.1 Optimisation & Intervention Selection

All management and general interventions were developed on the basis that they represent industry best practice to mitigate risks, fulfil requirement from a regulatory body, and improve our business performance and capabilities.

For this reason, all interventions within management and general investment case have been selected for AMP7 investment.

When it comes to delivering our programme of works we know that we must continue to be innovative and efficient. We have set ourselves a challenging target of reducing our costs by 8% during AMP7. This will be achieved by delivery of our business transformation programme.

We see innovation as integral to our everyday working at Bristol Water: We have deliberately embedded it within the business-as-usual processes of our asset management teams by embracing the full flexibility that totex and outcomes enables. We will look to be innovative in the following ways:

- **Open Innovation:** We have defined our strategic innovation challenges and run events such as our “Innovation Exchange” that invite suppliers to present their innovative solutions to predefined challenges that we set
- **Market Scanning:** We conduct market scanning through for cutting edge technology against our strategic innovation challenges and feed this into our optioneering process. In particular we subscribe to the Technology Approval Group which regularly scans and meets with water companies to unearth the most promising innovations for the sector
- **Partnering:** we undertake leading research into areas that we provide effective solutions for the future.

We will specifically look for process innovations that mean we can contribute to our 8% efficiency challenge and keep our customer’s bills low into the future. The management and general selected interventions are set out in Table 6, along with details of the associated costs.

Table 6: Selected interventions in the management and general investment case

Intervention ID	Area Ref.	Intervention Title	Capex (£)	Opex (£)
33.001.01	1	Offices & Depots Remedial Work	350,000	£0.00
33.001.02	1	Company Buildings Refurbishment	310,000	£0.00
33.001.03	1	Office Equipment	19,000	£0.00
33.001.04	1	Wellbeing (Kitchens/toilets/washing facilities)	85,000	£0.00
33.002.01	2	Transport & Plant Purchase & Adaptation	5,000,000	£0.00
33.003.01	3	Health And Safety General	78,000	£0.00
33.003.02	3	Health And Safety Active Fire Prevention	35,000	£0.00

Intervention ID	Area Ref.	Intervention Title	Capex (£)	Opex (£)
33.003.03	3	Health and Safety Asbestos Removal	35,000	£0.00
33.003.04	3	H&S Working at Height Improvements	150,000	£0.00
33.003.05	3	H&S Confined Spaces	100,000	£0.00
33.003.06	3	H&S Chemical Plant	200,000	£0.00
33.003.07	3	H&S Electrical Safety	500,000	£0.00
33.003.08	3	H&S Hazard Rectification	100,000	£0.00
33.003.09	3	Live Spares and Training Centre	175,000	£0.00
33.007.02	3	Cascade Upgrades	43,000	£0.00
33.004.01	4	Reservoir Cover Alarms Upgrade	230,000	£0.00
33.004.02	4	Lock and Key Replacement	190,000	£0.00
33.004.03	4	Security Upgrades	85,000	£0.00
33.004.04	4	Security - Miscellaneous	130,000	£0.00
33.005.01	5	River Reg Control Gates	130,000	£0.00
33.005.02	5	ISO 50001 - continuous efficiency Initiatives	25,000	£0.00
33.005.03	5	ISO 14001: Environmental Management System – set up and introduction	85,000	£0.00
33.007.01	5	ISO 14001: Environmental Management System – implementation and certification	50,000	£0.00
33.005.05	5	Drought Baseline Monitoring; Drought Plan development	250,000	£0.00
33.005.06	5	Water Resources Management Plan development	600,000	£0.00
33.006.01	6	Business Improvements & Innovation	950,000	£0.00
33.005.04	7	Project Work - Next PR24	2,500,000	£0.00
26.001.01	8	Building Maintenance Base Expenditure	1,000,000	£0.00
26.001.02	8	Major Repairs	200,000	£0.00
26.002.02	8	Asset Data Surveys and Updates	200,000	£0.00
26.002.02	8	Annual Condition Surveys	100,000	£0.00
Management and general total capital investment (pre-efficiency)			13,905,000	£0.00
Management and general total capital investment with 8% efficiency applied.			12,792,600	-

The total management and general investment is split across the Water Resources and the Water Network Plus Wholesale Control categories of our Business Plan. Costs are allocated to the Water Resources Business Units. Investment is all related to the maintaining the long term capability of the non-infrastructure assets. Water Service and Business Unit Allocation for management and general investment is summarised in Table 7.

Table 7: Water Services and Business Unit Allocation

Wholesale Control	Water Resources	Water Network Plus			Total
<i>Business Unit Allocation</i>	<i>01 Water Resources</i>	<i>02 Raw Water Distribution</i>	<i>03 Water Treatment</i>	<i>02 Raw Water Distribution</i>	
Management and general capital investment (%)	21.0%	2.4%	28.1%	48.5%	100%
Management and general capital investment	£2.917m	£0.335m	£3.912m	£6.741m	£13.905m
Maintaining the long term capability of the assets - non-infra	£2.917m (21.0%)	£0.335m (2.4%)	£3.912m (28.1%)	£6.611m (47.5%)	£13.775m (99%)
Other capital expenditure - non-infra	£0m (0%)	£0m (0%)	£0m (0%)	£0.130m (0.9%)	£0.130m (1%)
Management and general capital investment with 8% efficiency					£12.793m

5.2 Assumptions

There are a number of general assumptions that have been made in the development of our investment cases. These are discussed in detail in the PR19 Investment Cases Summary Document. Assumptions specific to this investment case are discussed below.

For the intervention 'River Reg Control Gate', where there is a river control gate that is no longer used or required, the costing has been assumed to be the worst case scenario for us, which would be to share the cost of removing the gate with the Environment Agency. If the gate is left in situ, the cost of this intervention will be less.

5.3 AMP 8

The legal requirements and mandatory investment within Management and General indicate that there should be a steady investment profile throughout each AMP unless there is significant asset renewal or purchase such as major Head Office modifications in AMP5 or significant vehicle renewal in AMP7. It is therefore predicted that AMP8 investment will look similar to AMP7 if the additional fleet expenditure is disregarded as there are no major works planned for AMP8.

The surveys proposed for AMP7 for buildings will provide Bristol Water with reliable data on the condition of all Production and Non-Production Buildings. This data can then be used to create action plans and priority lists to better allocate budgets in AMP8.

5.4 Base Maintenance

This investment case covers all activities related to Management and General and therefore no assessment of base maintenance investment is required

5.5 Historic & AMP7 Investment Comparison

A summary of historical management and general investment is provided in Table 8, along with our AMP7 investment in management and general interventions. We have re-categorised data used in line with the scope of our investment cases. For historic data we have used the wholesale cost assessment (table 1 and 2 of the 16/17 return). Forecast data has been derived from PR19 data table (WS1 and WS2).

Table 8: Historical and AMP7 investment

AMP	Capital investment values	Investment (£m)
AMP5	AMP5 actual	43.235
AMP6	2015/16 actual	1.869
	2016/17 actual	1.632
	2017/18 actual	3.986
	2018/19 forecast	5.056
	2019/20 forecast	2.821
	AMP6 forecast	15.364
AMP7	AMP7 pre-efficiency	13.905
	AMP7 8% capex efficiency applied	12.793

Our AMP7 investment in management and general will be less than in AMP5 and AMP6. In AMP5 we undertook an extensive programme of buildings refurbishment and replacement at key sites, including our head office, Victoria pumping station, and in relation to our ultraviolet treatment works programme. Our AMP6 investment covers a range of improvements and statutory obligations under management and general. These improvements, coupled with our operational maintenance activities, have allowed us to sustain our business as usual capabilities and delivery targeted improvements to our ways of working. In AMP7 we will continue to invest in order to undertake our statutory obligations, and deliver improvements to our business capabilities and our asset health.

6 Conclusions

To continue to deliver excellent services to our customers, we will ensure our organisation has the necessary capabilities and operational efficiency. Our management and general interventions will address risks, fulfil obligations to regulatory bodies, and improve our business performance and capabilities in line with best practice.

The investment set out in our management and general this investment case will affect all areas of our business, and therefore influences many aspects of our service to customers. The main objective for the proposed AMP7 interventions is to ensure our assets are maintained appropriately for the benefit of current and future generations and to ensure we can continue to provide high levels of service efficiently and in a cost-effective manner.

An initial list of 27 risks were reduced to seven risks and used in conjunction with statutory obligations and industry best practices to generate 31 interventions. The 20 risks that were not taken forward represent residual risks that will be carried during AMP7. We will continue to monitor these residual risks throughout AMP7, and if the process requires these risks to be mitigated, we will respond with appropriate action.

We plan to invest a pre-efficiency total of £13.905m on the 31 management and general interventions. We have set ourselves a challenging target of reducing our costs by 8% during AMP7. This will be achieved through delivery of our business transformation programme, resulting in a post-efficiency investment of £12.793m

If we fail to invest in management and general then the quality of all the general projects and programmes of work and day to day management of the business and our asset health will ultimately deteriorate to unacceptable levels. The consequence of our asset deterioration will be unsafe working conditions and subsequent penalties for not meeting health and safety regulations, vehicles unable to respond efficiently to emergencies and invalid security systems.

Our business plan provides assurance to both deliver and monitor the delivery of its outcomes, it will meet relevant statutory requirements and licence obligations imposed by the UK Government.

7 Appendices

- Appendix A: Line of Sight
- Appendix B: Datasets
- Appendix C.1: Selected Risks
- Appendix C.2: Non-Selected Risks
- Appendix D: Options Considered
- Appendix E: Interventions
- Appendix F: Non-Selected Interventions

7.1 Appendix A: Line of Sight

Not applicable for management and general investment as no direct measurable performance commitment links have been established.

7.2 Appendix B: Datasets

This appendix lists the datasets used in this investment case and where they have been utilised.

Dataset File Name	Data Summary	Process In Which Data Has Been Used			
		Risk Identification, Verification and Needs Assessment	Optioneering	Intervention Costing	Benefits Quantification
REQ-0223_MandG Historic Spend.xlsx	M&G Capex AMP6	-	-	✓	-
REQ-0291_BN-2103 WS9-AMP6 Spend.xlsx	Business Improvement and Innovation Forecast (WS9)	-	-	✓	-
REQ-0292_Forecast for Investment Properties.xlsx	Forecast for Investment Properties (2015-2025)	-	-	✓	-
REQ-0293_20170504 SCHEDULE OF CONDITION 170132-922-13 Church Street FULL PDF.pdf	Survey Report Example for Investment Properties	-	-	✓	-
REQ-0294_All sites budget estimates.xls	All Sites budget estimates	-	-	✓	-
REQ-0295_FW Important - Budget submissions.msg	Budget submission estimates for FM works	-	-	✓	-
REQ-0296_a32968.pdf	Asbestos Inspection Survey example	-	-	✓	-
REQ-0297_Asbestos Spend Report Hawkins-HBI.xlsx	Asbestos Spend Report Hawkins-HBI	-	-	✓	-
REQ-0298_Bristol Water plc Annual RFB Subscription SQ16-0544.pdf	Bristol Water plc. Annual RFB Subscription (Asbestos)	-	-	✓	-
REQ-0299_Bristol Water plc Property Portfolio ASB SQ16-0555.pdf	Bristol Water plc. Property Portfolio ASB (Asbestos)	-	-	✓	-
REQ-0300_Kingswood depot.pdf	Kingswood depot asbestos example	-	-	✓	-
REQ-0301_RE HS Fire Prevention.msg	H&S Fire Prevention (Spec, Quotes etc.)	-	-	✓	-
REQ-0302_Network YTD HandS 1718.MHT.xlsx	Network YTD HandS 1718	-	-	✓	-
REQ-0303_PR19 Health and Safety Capital Expenditure.msg	PR19 Health and Safety Capital Expenditure	-	-	✓	-

Dataset File Name	Data Summary	Process In Which Data Has Been Used			
		Risk Identification, Verification and Needs Assessment	Optioneering	Intervention Costing	Benefits Quantification
REQ-0304_PR19 MandG from Production HandS risks with estimates.xlsx	PR19 MandG from Production HandS risk with estimates	-	-	✓	-
REQ-0305_PR19 MandG Review of BN-2030 Electrical Asset Review - HandS Electrical.xlsx	PR19 MandG Review of BN-2030 Electrical Asset Review - HandS Electrical	-	-	✓	-
REQ-0306_PR19 table MandG.xlsx	PR19 table MandG	-	-	✓	-
REQ-0307_Production hands ytd 1718 - Capex identified April 18.xlsx	Production hands ytd 1718 - Capex identified April 18	-	-	✓	-
REQ-0308_Production monthly Spend 16_17.xlsx	Production monthly Spend 16_17	-	-	✓	-
REQ-0309_Copy of 20180710 Buildings_Kiosks Report_PR19.xlsx	Copy of 20180710 Buildings_Kiosks Report_PR19	-	-	✓	-
REQ-0310_RE SEMD PR19.msg	SEMD PR19	-	-	✓	-
REQ-0311_Copy of CO2 emissions for current fleet.xls	Copy of CO2 emissions for current fleet	-	-	✓	-
REQ-0312_FW Fleet Tender Recommendations.msg	FW Fleet Tender Recommendations	-	-	✓	-
REQ-0313_FW pr19 investment case - fleet.msg	FW pr19 investment case - fleet	-	-	✓	-
REQ-0314_Vehicle co2 and MPG comparisson.xlsx	Vehicle co2 and MPG comparisson	-	-	✓	-
REQ-0315_RE WRMP Drought Plan costs.msg	RE WRMP Drought Plan costs	-	-	✓	-

7.3 Appendix C.1: Selected Risks

Risk selected within the management and general investment case in relation particular investment areas. Other interventions are derived on the basis that they are required for statutory obligations and business capability improvement.

SRR ID	Location/Zone	Revised Risk Description	Likelihood	Human Health / Environment	Ease to Resolve	Publicity & Reputation	Regulatory Impacts	customers Impacted	Max Impact	Risk Score
SRR178	Cheddar Ponds	IF tree branches are not cut back THEN there is a risk a customer could be injured by falling branch. <i>[Production Building Maintenance]</i>	4	3	2	3	3	1	3	12
SRR180	Stowey Treatment Works	IF the roof is not repaired THEN there is a risk it could collapse or leak onto electrical equipment and cause outage to customer. <i>[Production Building Maintenance]</i>	4	2	4	1	3	3	4	16
SRR181	Purton Treatment Works	IF the roof is not repaired THEN there is a risk it could collapse or leak onto electrical equipment and cause outage to customer. <i>[Production Building Maintenance]</i>	3	4	3	3	2	3	4	12
SRR187	Blagdon Reservoir	IF fence is not repaired THEN there is an increased H&S risk to customers. <i>[Production Building Maintenance]</i>	4	3	2	3	4	2	4	16
SRR189	Purton Treatment Works	IF Bristol Water does not invest in staff safety THEN there is a risk of staff being injured. <i>[Production Building Maintenance]</i>	3	4	2	2	3	1	4	12
SRR188	Shipton Moyne Treatment Works	IF a new fire alarm system is not installed at Shipton Moyne TW THEN there is a H&S risk to staff and visitors. <i>[Active Fire Protection]</i>	4	5	3	4	5	1	5	20
SRR814	Purton Treatment Works	IF electrical asset MCC9 at Purton TW cannot be isolated due to age of asset THEN it is not possible to effectively maintain equipment without major H&S hazard. <i>[Electrical Safety]</i>	4	4	3	2	2	1	4	16

7.4 Appendix C.2: Non-Selected Risks

SRR ID	Location/Zone	Revised Risk Description	Likelihood	Human Health / Environment	Ease to Resolve	Publicity & Reputation	Regulatory Impacts	customers Impacted	Max Impact	Risk Score
SRR176	Barrow Reservoir No 3	Collapse of A38 Retaining Wall Opposite Barrow No3	2	2	1	1	1	1	2	4
SRR177	0	Public/personnel H&S risk of tree falling (Blagdon - Butcombe Vale catchment)	3	3	2	2	3	1	3	9
SRR179	Banwell TW	IF concrete structure of main treatment block fails THEN operation of site is interrupted (Banwell-Area 3)	3	1	3	2	3	2	3	9
SRR182	Backwell Hill Reservoir	Failure of statutory SEMD regulation for alarms at Backwell Hill Reservoir (needs Mains power to improve security communications)	2	2	2	2	3	2	3	6
SRR183	Non Site Specific	Service Reservoir Grounds Maintenance not being consistently done causing H & S risks	3	3	2	1	2	2	3	9
SRR184	Chew Valley Reservoir	Accident, slips, cuts to members of the public, due to damaged railings at Chew Valley Lake.	3	2	2	2	2	2	2	6
SRR185	Chew Valley Reservoir	Public/personnel H&S risk of tree falling (Chew Valley Res)	3	3	2	2	3	1	3	9
SRR186	Purton TW	BMS saving opportunity - Purton site	2	1	2	1	1	1	2	4
SRR191	Barrow Reservoir 1	Metal fence collapsing causing damage to public and preventing security to site.	3	2	3	2	2	1	3	9
SRR192	Blagdon PS	IF at Blagdon visitors centre the roof cover and tiles fail THEN leaking water with loose and slipping roof tiles	3	3	3	2	1	2	3	9
SRR193	Cheddar TW	BMS saving opportunity - Cheddar site	2	1	2	1	1	1	2	4
SRR815	Forum TW	IF MCC failure due to age (various ages) and unable to maintain through obselecence, THEN reduced site output/loss of supply (Forum-Area 2)	2	2	2	2	2	4	4	8
SRR817	Non Site Specific	IF unsecure walkway sections THEN this could cause fall from height.	2	3	2	2	1	1	3	6
SRR819	Frome Town TW	IF Phosphoric Acid chemical spill during chemical delivery THEN no containment and likely contamination of surface waters (Frome Town TW)	2	3	2	1	2	1	3	6

SRR ID	Location/Zone	Revised Risk Description	Likelihood	Human Health / Environment	Ease to Resolve	Publicity & Reputation	Regulatory Impacts	customers Impacted	Max Impact	Risk Score
SRR820	Littleton TW	IF PACL chemical spill during chemical delivery THEN no containment and likely contamination of surface waters (Littleton PS)	2	3	2	1	2	1	3	6
SRR821	Littleton TW	IF Peroxide chemical spill during chemical delivery THEN no containment and likely contamination of surface waters (Littleton TW)	2	3	2	1	2	1	3	6
SRR822	Littleton TW	IF Phosphoric Acid chemical spill during chemical delivery THEN no containment and likely contamination of surface waters (Littleton TW)	2	3	2	1	2	1	3	6
SRR823	Littleton TW	IF Sodium hydroxide chemical spill during chemical delivery THEN no containment and likely contamination of surface waters (Littleton TW)	2	3	2	1	2	1	3	6
SRR824	Littleton TW	IF Sulphuric Acid chemical spill during chemical delivery THEN no containment and likely contamination of surface waters (Littleton TW)	2	3	2	1	2	1	3	6
SRR826	Banwell TW	IF chemical spill during chemical delivery of Phosphoric Acid THEN no containment and likely contamination of surface waters (Banwell TW)	2	3	2	1	2	1	3	6

7.5 Appendix D: Options Considered

Risk selected within the management and general investment case in relation particular investment areas were developed into options and interventions. Other options and interventions are derived on the basis that they are required for statutory obligations and business capability improvement.

Strategic Risk Register (SRR) Reference	SRR Revised Risk Description	Risk Need		Identification & Viability of Options			
		SRR Need ID	Need Description (from SRR)	Proposed Option Name	Proposed Option Description	Option Viability?	Option to be Developed into an Intervention?
N/A	N/A	N/A	N/A	Offices & Depots Remedial Work	Basic maintenance on buildings other than those included in 'Production buildings' and on-site structures	Option is viable	Y
N/A	N/A	N/A	N/A	Company Buildings Refurbishment	Additional capital expenditure for updates to company buildings	Option is viable	Y
N/A	N/A	N/A	N/A	Office Equipment	Capital expenditure allocation for office equipment (e.g. MFD's, Plotters, post room equipment etc.)	Option is viable	Y
N/A	N/A	N/A	N/A	Wellbeing (Kitchens/toilets/washing facilities)	Ref. Olford - No welfare at all, Cheddar - no heating or hot water, Frome - no canteen area as priorities	Option is viable	Y
N/A	N/A	N/A	N/A	Transport & Plant Purchase & Adaptation	Maintenance and renewal costs for transport and plant	Option is viable	Y
N/A	N/A	N/A	N/A	Health And Safety General	Capital expenditure allocation for general H&S aspects excluding those covered in 33.003.02, 33.003.03, 33.006.003,33.006.04, 33.006.05, 33.006.006 & 33.006.07	Option is viable	Y
SRR188	IF a new fire alarm system is not installed at Shipton Moyne TW THEN there is a H&S risk to staff and visitors.	SRRN230	Bristol Water have a duty as part of their site maintenance to ensure all potential hazards to public and staff health and safety are kept under control. The risk of a fire starting and no alarm going off is a serious risk that could potentially kill someone. Bristol Water must mitigate if they are to meet their promises of providing Excellent customer Experiences and Safe and Reliable Water Supplies.	Health And Safety Active Fire Prevention	Capital expenditure allocation for active fire prevention H&S aspects.	Option is viable	Y
N/A	N/A	N/A	N/A	Health And Safety Asbestos Removal	Capital expenditure allocation for asbestos removal H&S aspects.	Option is viable	Y
N/A	N/A	N/A	N/A	H&S Working at Height Improvements	Ensuring safe working at height	Option is viable	Y
N/A	N/A	N/A	N/A	H&S Confined Spaces	Removing the potential environment for working in confined spaces or making them as safe as possible.	Option is viable	Y
N/A	N/A	N/A	N/A	H&S Chemical Plant		Option is viable	Y
SRR814	IF MCC9 at Purton TW can not be isolated due to age of asset THEN it is not possible to effectively maintain equipment without major H&S hazard	N/A	MCC9 needs to have function to isolate, so that it can be effectively maintained	H&S Electrical Safety	Addresses equipment is non-compliant with H&S at Work Act and poor working practices. E.g. LV controls on panels.	Option is viable	Y
N/A	N/A	N/A	N/A	H&S Hazard Rectification	H&S Hazard Rectification	Option is viable	Y
N/A	N/A	N/A	N/A	Live Spares and Training Centre	Live Spares and Training Centre	Option is viable	Y
N/A	N/A	N/A	N/A	Reservoir Cover Alarms Upgrade	Install reservoir cover alarms on Basic and Basic Plus category service reservoirs to the same standard as those on Enhanced service reservoirs	Option is viable	Y
N/A	N/A	N/A	N/A	Lock and Key Replacement	Replace BW master key system on all sites as patent has expired on current system and it does not meet the required standard	Option is viable	Y
N/A	N/A	N/A	N/A	Security Upgrades	Security upgrades not previously identified to comply with Standard for Security at Operational Assets	Option is viable	Y
N/A	N/A	N/A	N/A	Security - Miscellaneous	Security - Miscellaneous	Option is viable	Y

Strategic Risk Register (SRR) Reference	SRR Revised Risk Description	Risk Need		Identification & Viability of Options			
		SRR Need ID	Need Description (from SRR)	Proposed Option Name	Proposed Option Description	Option Viability?	Option to be Developed into an Intervention?
N/A	N/A	N/A	N/A	River Reg Control Gates	Removal of river control gate shafted by Bristol water and the EA	Option is viable	Y
N/A	N/A	N/A	N/A	ISO 50001 (continuous efficiency Initiatives)	Admin costs (Auditors and consultants) for implementing ISO 50001 energy efficiency initiatives	Option is viable	Y
N/A	N/A	N/A	N/A	ISO 14001: Environmental Management System	Initiative to implement ISO 14001 EMS	Option is viable	Y
N/A	N/A	N/A	N/A	Drought Baseline Monitoring; Drought Plan development	Ensuring plans for securing drinking water for varying levels of drought are in place.	Option is viable	Y
N/A	N/A	N/A	N/A	Water Resources Management Plan development	Water Resources Management Plan development	Option is viable	Y
N/A	N/A	N/A	N/A	Business Improvements & Innovation	All business workstreams as a collective as its not known exactly what projects will be done in the next AMP but similar spending is expected for improvements and innovation	Option is viable	Y
N/A	N/A	N/A	No options as intervention is mandatory	Project Work - Next PR24	Requirement for additional support for PR24	Option is viable	Y
SRR178	IF tree branches are not cut back THEN there is a risk a customer could be injured by falling branch.	SRRN226	Bristol Water have a duty as part of their site maintenance to ensure all potential hazards to public and staff health and safety are kept under control. The risk of a branch falling and injuring a customer is a serious risk that Bristol Water must mitigate if they are to meet their promises of providing Excellent customer Experiences and Safe and Reliable Water Supplies.	Building Maintenance Base Expenditure	Create a larger budget to allow for more maintenance and repairs to be conducted on buildings.	This is a viable option.	Yes.
SRR180	IF the roof is not repaired THEN there is a risk it could collapse or leak onto electrical equipment and cause outage to customer.	SRRN227	Bristol Water have a duty as part of their site maintenance to ensure all potential hazards to public and staff health and safety are kept under control. The risk of a branch falling and injuring a customer is a serious risk that Bristol Water must mitigate if they are to meet their promises of providing Excellent customer Experiences and Safe and Reliable Water Supplies.	Major Repairs	Allow a larger separate budget for major repairs to be conducted should something major occur.	Creating a larger budget for major incidents will mean the regular maintenance budget will not be severely depleted by a major incident.	Yes.
SRR181	IF the roof is not repaired THEN there is a risk it could collapse or leak onto electrical equipment and cause outage to customer.	SRRN228	There have been multiple risks raised by the FM Team regarding the condition of the roofs across BW sites. Some of the risks raised are regarding roofs that cover important assets such as switchgears and HV electrical controls. If these roofs are not fixed or replaced then there is a serious risk of the customer losing supply from the asset being damaged.				Yes.
SRR187	IF fence is not repaired THEN there is an increased Cryptosporidium risk to customers.	SRRN229	If Bristol Water are to meet their customer outcome of "Delivering a safe and reliable supply" then it is crucial to mitigate risks that could impact customer health. Investment is needed to repair the fence to stop cows introducing Cryptosporidium into a customer supply.	Annual Condition Survey	Budget for annual condition surveys to be conducted on production buildings, and use this to gauge what level of proactive maintenance is needed.	This is a viable option.	Yes.
SRR188	H&S risk due to no fire alarm on site	SRRN230	Bristol Water have a duty as part of their site maintenance to ensure all potential hazards to public and staff health and safety are kept under control. The risk of a fire starting and no alarm going off is a serious risk that could potentially kill someone. Bristol Water must mitigate if they are to meet their promises of providing Excellent customer Experiences and Safe and Reliable Water Supplies.	Health And Safety Active Fire Prevention	Capital expenditure allocation for active fire prevention H&S aspects.	This is a viable option.	Yes.

Strategic Risk Register (SRR) Reference	SRR Revised Risk Description	Risk Need		Identification & Viability of Options			
		SRR Need ID	Need Description (from SRR)	Proposed Option Name	Proposed Option Description	Option Viability?	Option to be Developed into an Intervention?
SRR189	IF Bristol Water does not invest in staff safety THEN there is a risk of staff being injured.	SRRN231	Bristol Water have a duty as part of their site maintenance to ensure all potential hazards to public and staff health and safety are kept under control. The risk of a an operative falling from a great height and injuring themselves is a serious risk that Bristol Water must mitigate if they are to meet their promises of providing Excellent customer Experiences and Safe and Reliable Water Supplies.	Asset Data Survey and Update	Conduct a survey of production buildings and create a database or a similar log to create a priority list. Can be supplemented with condition surveys. Update periodically to capture building and asset deterioration.	This is a viable option.	Yes.

7.6 Appendix E: Interventions Developed

Strategic Risk Register (SRR) Reference	SRR Revised Risk Description	Risk Need		Identification & Viability of Options			Proposed Interventions		Costs	Benefits
		SRR Need ID	Need Description (from SRR)	Proposed Option Name	Proposed Option Description	Option Viability?	Ref. No.	Intervention Title	Capex After (£M)	Change in Opex (£k)
N/A	N/A	N/A	No options as intervention is mandatory	Offices & Depots Remedial Work	Basic maintenance on buildings other than those included in 'Production buildings' and on-site structures	Option is viable	33.001.01	Offices & Depots Remedial Work	0.4	0
N/A	N/A	N/A	No options as intervention is mandatory	Company Buildings Refurbishment	Additional capital expenditure for updates to company buildings	Option is viable	33.001.02	Company Buildings Refurbishment	0.364	0
N/A	N/A	N/A	No options as intervention is mandatory	Office Equipment	Capital expenditure allocation for office equipment (e.g. MFD's, Plotters, post room equipment etc.)	Option is viable	33.001.03	Office Equipment	0.022	0
N/A	N/A	N/A	No options as intervention is mandatory	Wellbeing (Kitchens/toilets/washing facilities)	Ref. Olford - No welfare at all, Cheddar - no heating or hot water, Frome - no canteen area as priorities	Option is viable	33.001.04	Wellbeing (Kitchens/toilets/washing facilities)	0.1	0
N/A	N/A	N/A	No options as intervention is mandatory	Transport & Plant Purchase & Adaptation	Maintenance and renewal costs for transport and plant	Option is viable	33.002.01	Transport & Plant Purchase & Adaptation	5.676	0
N/A	N/A	N/A	No options as intervention is mandatory	Health And Safety General	Capital expenditure allocation for general H&S aspects excluding those covered in 33.003.02, 33.003.03, 33.006.003,33.006.04, 33.006.05, 33.006.006 & 33.006.07	Option is viable	33.003.01	Health And Safety General	0.09	0
SRR188	IF a new fire alarm system is not installed at Shipton Moyne TW THEN there is a H&S risk to staff and visitors.	SRRN230	Bristol Water have a duty as part of their site maintenance to ensure all potential hazards to public and staff health and safety are kept under control. The risk of a fire starting and no alarm going off is a serious risk that could potentially kill someone. Bristol Water must mitigate if they are to meet their promises of providing Excellent customer Experiences and Safe and Reliable Water Supplies.	Health And Safety Active Fire Prevention	Capital expenditure allocation for active fire prevention H&S aspects.	Option is viable	33.003.02	Health And Safety Active Fire Prevention	0.04	0
N/A	N/A	N/A	No options as intervention is mandatory	Health And Safety Asbestos Removal	Capital expenditure allocation for asbestos removal H&S aspects.	Option is viable	33.003.03	Health And Safety Asbestos Removal	0.04	0
N/A	N/A	N/A	No options as intervention is mandatory	H&S Working at Height Improvements	Ensuring safe working at height	Option is viable	33.003.04	H&S Working at Height Improvements	0.15	0
N/A	N/A	N/A	No options as intervention is mandatory	Health And Safety General	Cascade Upgrade	Option is viable	33.007.02	Health And Safety General	0.043	0
N/A	N/A	N/A	No options as intervention is mandatory	H&S Confined Spaces	Removing the potential environment for working in confined spaces or making them as safe as possible.	Option is viable	33.003.05	H&S Confined Spaces	0.1	0
N/A	N/A	N/A	No options as intervention is mandatory	H&S Chemical Plant		Option is viable	33.003.06	H&S Chemical Plant	0.2	0
SRR814	IF MCC9 at Purton TW can not be isolated due to age of asset THEN it is not possible to effectively maintain equipment without major H&S hazard	N/A	No options as intervention is mandatory	H&S Electrical Safety	Addresses equipment is non-compliant with H&S at Work Act and poor working practices. E.g. LV controls on panels.	Option is viable	33.003.07	H&S Electrical Safety	0.5	0
N/A	N/A	N/A	No options as intervention is mandatory	H&S Hazard Rectification	H&S Hazard Rectification	Option is viable	33.003.08	H&S Hazard Rectification	0.1	0
N/A	N/A	N/A	No options as intervention is mandatory	Live Spares and Training Centre	Live Spares and Training Centre	Option is viable	33.003.09	Live Spares and Training Centre	0.2	0
N/A	N/A	N/A	No options as intervention is mandatory	Reservoir Cover Alarms Upgrade	Install reservoir cover alarms on Basic and Basic Plus category service reservoirs to the same standard as those on Enhanced service reservoirs	Option is viable	33.004.01	Reservoir Cover Alarms Upgrade	0.275	0
N/A	N/A	N/A	No options as intervention is mandatory	Lock and Key Replacement	Replace BW master key system on all sites as patent has expired on current system and it does not meet the required standard	Option is viable	33.004.02	Lock and Key Replacement	0.225	0
N/A	N/A	N/A	No options as intervention is mandatory	Security Upgrades	Security upgrades not previously identified to comply with Standard for Security at Operational Assets	Option is viable	33.004.03	Security Upgrades	0.1	0
N/A	N/A	N/A	No options as intervention is mandatory	Security - Miscellaneous	Security - Miscellaneous	Option is viable	33.004.04	Security - Miscellaneous	0.15	0
N/A	N/A	N/A	No options as intervention is mandatory	River Reg Control Gates	Removal of river control gate shafted by Bristol water and the EA	Option is viable	33.005.01	River Reg Control Gates	0.15	0
N/A	N/A	N/A	No options as intervention is mandatory	ISO 50001 (continuous efficiency Initiatives)	Admin costs (Auditors and consultants) for implementing ISO 50001 energy efficiency initiatives	Option is viable	33.005.02	ISO 50001 (continuous efficiency Initiatives)	0.03	0

Strategic Risk Register (SRR) Reference	SRR Revised Risk Description	Risk Need		Identification & Viability of Options			Proposed Interventions		Costs	Benefits
		SRR Need ID	Need Description (from SRR)	Proposed Option Name	Proposed Option Description	Option Viability?	Ref. No.	Intervention Title	Capex After (£M)	Change in Opex (£k)
N/A	N/A	N/A	No options as intervention is mandatory	ISO 14001: Environmental Management System set up	Initiative to implement ISO 14001 EMS	Option is viable	33.005.03	ISO 14001: Environmental Management System Implementation	0.1	0
N/A	N/A	N/A	No options as intervention is mandatory	ISO 14001: Environmental Management System certification	EMS Certification to ISO 14000	Option is viable	33.007.01	ISO 14001: Environmental Management System Certification	0.05	0
N/A	N/A	N/A	No options as intervention is mandatory	Drought Baseline Monitoring; Drought Plan development	Ensuring plans for securing drinking water for varying levels of drought are in place.	Option is viable	33.005.05	Drought Baseline Monitoring; Drought Plan development	0.301087	0
N/A	N/A	N/A	No options as intervention is mandatory	Water Resources Management Plan development	Water Resources Management Plan development	Option is viable	33.005.06	Water Resources Management Plan development	0.750313	0
N/A	N/A	N/A	No options as intervention is mandatory	Business Improvements & Innovation	All business workstreams as a collective as its not known exactly what projects will be done in the next AMP but similar spending is expected for improvements and innovation	Option is viable	33.006.01	Business Improvements & Innovation	1.129272	0
N/A	N/A	N/A	No options as intervention is mandatory	Project Work - Next PR24	Requirement for additional support for PR24	Option is viable	33.007.01	Project Work - Next PR24	3	0
SRR178	IF tree branches are not cut back THEN there is a risk a customer could be injured by falling branch.	SRRN226	Bristol Water have a duty as part of their site maintenance to ensure all potential hazards to public and staff health and safety are kept under control. The risk of a branch falling and injuring a customer is a serious risk that Bristol Water must mitigate if they are to meet their promises of providing Excellent customer Experiences and Safe and Reliable Water Supplies.	Building Maintenance Base Expenditure	Create a larger budget to allow for more maintenance and repairs to be conducted on buildings.	This is a viable option.	26.001.01	Building Maintenance Base Expenditure	1	0
SRR180	IF the roof is not repaired THEN there is a risk it could collapse or leak onto electrical equipment and cause outage to customer.	SRRN227	Bristol Water have a duty as part of their site maintenance to ensure all potential hazards to public and staff health and safety are kept under control. The risk of a branch falling and injuring a customer is a serious risk that Bristol Water must mitigate if they are to meet their promises of providing Excellent customer Experiences and Safe and Reliable Water Supplies.	Major Repairs	Allow a larger separate budget for major repairs to be conducted should something major occur.	Creating a larger budget for major incidents will mean the regular maintenance budget will not be severely depleted by a major incident.	26.001.02	Major Repairs	0.2	0
SRR181	IF the roof is not repaired THEN there is a risk it could collapse or leak onto electrical equipment and cause outage to customer.	SRRN228	There have been multiple risks raised by the FM Team regarding the condition of the roofs across BW sites. Some of the risks raised are regarding roofs that cover important assets such as switchgears and HV electrical controls. If these roofs are not fixed or replaced then there is a serious risk of the customer losing supply from the asset being damaged.							
SRR189	IF Bristol Water does not invest in staff safety THEN there is a risk of staff being injured.	SRRN231	Bristol Water have a duty as part of their site maintenance to ensure all potential hazards to public and staff health and safety are kept under control. The risk of a an operative falling from a great height and injuring themselves is a serious risk that Bristol Water must mitigate if they are to meet their promises of providing Excellent customer Experiences and Safe and Reliable Water Supplies.	Asset Data Survey and Update	Conduct a survey of production buildings and create a database or a similar log to create a priority list. Can be supplemented with condition surveys. Update periodically to capture building and asset deterioration.	This is a viable option.	26.002.01	Asset Data Survey and Update	0.2	0
SRR187	IF fence is not repaired THEN there is an increased Cryptosporidium risk to customers.	SRRN229	If Bristol Water are to meet their customer outcome of "Delivering a safe and reliable supply" then it is crucial to mitigate risks that could impact customer health. Investment is needed to repair the fence to stop cows introducing Cryptosporidium into a customer supply.	Annual Condition Survey	Budget for annual condition surveys to be conducted on production buildings, and use this to gauge what level of proactive maintenance is needed.	This is a viable option.	26.002.02	Annual Condition Survey	0.1	0

7.7 Appendix F: Non-Selected Interventions

Not applicable for management and general investment as all interventions were selected on the basis that they are required for statutory obligations and business capability improvement.